

WHAT IS CLAIMED IS:

1. A motor comprising:

a radial dynamic pressure bearing section, the radial dynamic pressure  
 5 bearing section including opposing radial dynamic pressure surfaces formed  
 on a rotor and a stator in which a dynamic pressure is generated in a  
 lubrication fluid between the radial dynamic pressure surfaces to thereby  
 rotatably support the rotor with respect to the stator;

thrust magnets mounted on the rotor and the stator in a manner to  
 10 oppose to each other for generating a magnetic action to levitate the rotor in  
 an axial direction thereof and rotatably support the rotor in a thrust direction  
 thereof with respect to the stator; and

a magnetic shield device provided between the thrust magnets and the  
 radial dynamic pressure bearing section for isolating the radial dynamic  
 15 pressure bearing section from a leak magnetic flux of the thrust magnets.

2. A motor according to claim 1, wherein the magnetic shield  
 device is formed from a magnetic absorbing member that absorbs the leak  
 magnetic flux from the thrust magnetic bearings.

3. A motor according to claim 2, wherein the magnetic absorbing  
 member is formed from a yolk member having a magnetic permeability  
 greater than a magnetic permeability of a mounting member provided on at  
 least one of the rotor and the stator on which the thrust magnets are  
 25 mounted.

4. A motor according to claim 1, wherein the magnetic shield  
 device comprises an insertion member that spaces a distance between the  
 thrust magnets and the radial dynamic pressure bearing section, and the

insertion member is formed in one piece with a mounting member provided on at least one of the rotor and the stator on which the thrust magnets are provided.

5           5.     A motor according to claim 1, wherein the rotor is an outer rotor type in which the rotor is disposed outside the stator in a radial direction thereof.

10           6.     A motor according to claim 1, wherein the thrust magnets are disposed inside the radial dynamic pressure bearing section in the radial direction, and the magnetic shield device is disposed between the thrust magnets and the radial dynamic pressure bearing section in the radial direction to prevent the magnetic flux of the thrust magnets from affecting the radial dynamic pressure bearing section.

15           7.     A motor according to claim 6, wherein the stator has a fixed shaft, the rotor is disposed about an outer periphery of the fixed shaft, a bearing sleeve that forms the radial dynamic pressure bearing section is disposed between the fixed shaft and the rotor, and the thrust magnets are  
20           mounted inside the fixed shaft and inside the radial dynamic pressure bearing section.

            8.     A motor according to claim 7, the lubrication fluid is one selected from a group consisting of air and oil.

25           9.     A motor having a rotor and a stator, the motor comprising:  
            a radial dynamic pressure bearing section formed between the rotor and the stator;

a thrust magnet unit formed on the rotor and the stator for generating a magnetic action to levitate the rotor in an axial direction thereof and rotatably support the rotor in a thrust direction thereof with respect to the stator; and

5 a magnetic shield device provided between the thrust magnet unit and the radial dynamic pressure bearing section for isolating the radial dynamic pressure bearing section from a leak magnetic flux of the thrust magnet unit.

10 10. A motor according to claim 9, wherein the magnetic shield device is formed from a magnetic absorbing member that absorbs the leak magnetic flux from the thrust magnetic bearing unit.

15 11. A motor according to claim 10, wherein the thrust magnet unit includes magnets mounted on mounting members formed on the rotor and the stator, and the magnetic absorbing member is formed from a yolk member having a magnetic permeability greater than a magnetic permeability of at least one of the mounting members provided on at least one of the rotor and the stator on which the thrust magnets are mounted.

20 12. A motor according to claim 9, wherein the magnetic shield device comprises an insertion member that spaces a distance between the thrust magnet unit and the radial dynamic pressure bearing section, and the insertion member is provided on a mounting member that is integrally formed with at least one of the rotor and the stator on which the thrust  
25 magnet unit is formed.

13. A motor according to claim 9, wherein the rotor is an outer rotor type in which the rotor is disposed outside the stator in a radial direction thereof.

14. A motor according to claim 9, wherein the thrust magnet unit includes thrust magnets that are disposed inside the radial dynamic pressure bearing section in the radial direction, and the magnetic shield device is  
5 disposed between the thrust magnets and the radial dynamic pressure bearing section in the radial direction to prevent a magnetic flux of the thrust magnets from reaching the radial dynamic pressure bearing section.

15. A motor according to claim 14, wherein the stator has a fixed  
10 shaft, the rotor is disposed about an outer periphery of the fixed shaft, a bearing sleeve that forms the radial dynamic pressure bearing section is disposed between the fixed shaft and the rotor, and the thrust magnets are mounted inside the fixed shaft and inside the radial dynamic pressure bearing section in the radial direction thereof.